501.43117X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Takahiro FUJITA et al.

Serial No.: 10/657,162

Filed: September 9, 2003

For: MANAGING METHOD FOR OPTIMIZING CAPACITY OF STORAGE

PETITION TO MAKE SPECIAL
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII

Commissioner for Patents   December 29, 2004
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Petition

Applicants hereby petition to make this application **Special**, in accordance with

37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application

filed in the United States Patent and Trademark Office on September 9, 2003 and as

such has not received any examination by the Examiner.

2. Claims

Applicants hereby represent that all the claims in the present application are

directed to a single invention. If upon examination it is determined that all the claims

presented are not directed to a single invention, Applicants will make an election

without traverse as a prerequisite to the granting of special status.

3. Search

Applicants hereby submit that a pre-examination search has been made by a professional searcher, (a copy of which is attached), in the following classes and subclasses:

Class	Subclass
709	223, 226, 229
718	104, 105

4. Copy of References

A listing of all references found by the professional searcher is provided on a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

5. Detailed Discussion of the References and Distinctions Between the References and the Claims

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject matter encompassed by the claims of the present application, and which discussion particularly points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

a. Detailed Discussion of the References

U.S. Patent No. 6,026,425 (Suguri et al.), assigned to Nippon Telegraph and

Telephone Corp., is entitled Non-Uniform System Load Balance Method and Apparatus for Updating Threshold of Tasks According to Estimated Load Fluctuation. Disclosed is a load balancing method that can estimate a load of a node (computer) based on the number of tasks being or waiting to be processed and determining an estimated load value 21 of the node. A task acceptance control unit 19 compares the estimated load value 21 and a threshold value 27 which is set with respect to the number of tasks existing in the node so as to limit the load of the node. Control unit 19 judges, based on a result of the comparison, whether the accepted task is handed over to a task processing unit 20 or is transmitted to a logical ring network 60B (see, figure 1; abstract; and column 9, lines 22-29).

U.S. Patent Publication No. 2003/0023660 A1 (Kosanovic) is entitled Real-Time Embedded Resource Management System. Disclosed is a resource management agent used to manage resources in a processor 20. Resources can be memory. A communication processor 20 includes a capacity determining device for determining an amount of resource available to be assigned, a load determining device for determining an estimate of the resource needed for each function waiting in the queue to execute, and an allocating device for allocating the resource to the functions based on a hierarchical priority scheme. The processor 20 bases the estimated amount of a resource needed to execute a function on the maximum amount of the resource that the function can use. The processor 20 monitors the actual consumption of the resource by the function. If the executing functions consume an amount of the resource exceeding a high threshold value, then the processor 20 begins to reduce the amount of the resources allocated. If the executing functions collectively consume less of the

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resource than the value indicated by a low threshold, the processor 20 attempts to maximize the allocation of the resource (see, abstract; and paragraphs 7, 47, 48, and 50).

U.S. Patent Publication No. 2004/0025162 A1 (Fisk) is entitled Data Storage Management System and Method. Disclosed is a data storage manager 118 that calculates the I/O capacity of a data storage resource 116 for a given workload. Data storage manager 118 calculates the utilization level of the data storage resource 116. The utilization level is a measure of percent of I/O capacity that is being used. It can be calculated by dividing a measured average I/O operations per second (IOPS) by the estimated IOPS. A host processor 1200 communicates with networked data storage resources 1202. An encapsulated storage file system (ESFS) management agent and facilities 1206 manages the SAN fabric 1214 and the physical devices 1216 in the networked data storage resource 1202 to allocate resources to meet performance objectives (see, figures 2, 12; and paragraphs 60, 61, and 222).

U.S. Patent Publication No. 2004/0054850 A1 (Fisk) is entitled Context Sensitive Storage Management. Disclosed is a data storage manager operation 200 that includes a workload model 204 and an allocation utility 208. Workload model 204 calculates the utilization level of the data storage resource 196. The utilization level can be calculated by dividing a measured average I/O operations per second (IOPS) by an estimated IOPS capacity of the data storage resource 196. Data storage manager operation 200 determines the I/O capacity of the data storage resource 196 (see, figures 4, 5; and paragraphs 79, 88, 89, and 94).

b. Distinctions Between the References and the Claims

The present invention as recited in the claims filed are not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as recited in the claims is directed to a managing method to be executed by a management computer connected to a computer and storage apparatus through a network, that includes: allocating a storage area of predetermined capacity from the storage area of the storage apparatus to the computer; obtaining the capacity utilization of each storage area allocated to the computer; calculating an estimated capacity utilization which is estimated from the capacity utilization of each storage area; and collecting a storage area in which the difference between the capacity of the allocated storage area and the estimated capacity utilization when the capacity of the allocated storage area is greater than the estimated capacity utilization.

The above described features of the present invention, particularly calculating an estimated capacity utilization which is estimated from the capacity utilization of each storage area, and collecting a storage area in which the difference between the capacity of the allocated storage area and the estimated capacity utilization when the capacity of the allocated storage area is greater than the estimated capacity utilization, are not taught or suggested by any of the references of record whether taken individually or in combination with each other.

6.   **Fee (37 C.F.R. 1.17(i))**

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X]   the Credit Card Payment Form (attached) for $130.00.

[ ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Mattingly, Stanger & Malur, Deposit Account No. 50-1417 (501.43117X00).

Respectfully submitted,

MATTINGLY, STANGER & MALUR, P.C.

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FDB/sdb
Enclosures